**Transportation Planning Program**
**Office of State Planning**
**California Transportation Investment System (CTIS) Tool**

## FACT SHEET

### *PURPOSE:*

To visually display, using GIS software, where transportation investment is currently underway (programmed) and where it is planned over the next 20 years. Included in this tool are highway, local, rail, airport, bicycle, pedestrian, and transit projects at both the State and regional levels. This sketch level tool will assist Caltrans and regional planners in identifying unmet needs, gaps, and overlaps on the transportation system, opportunities for improved timing and coordination of projects, as well as providing a comprehensive representation of the planned transportation system for the 2002 California Transportation Plan.

### *PROCESS:*

Information on programmed projects was taken from the California Transportation Improvement Program System (CTIPS) data base, which includes State Transportation Improvement Program (STIP) and State Highway and Operations Protection Program (SHOPP) projects. This data was reviewed and verified by Caltrans District staff in consultation with their regional agency partners.

Planned projects were taken from approved (as of January 1, 1999) Metropolitan and Regional Transportation Plans and from several Caltrans system plans (Interregional Transportation Strategic Plan and the California Aviation System Plan). District staff working with their respective regional agencies collected data on regional projects.

### *BACKGROUND/PLAYERS:*

A technical advisory committee (TAC) provided suggestions on tool design and data collection process and was comprised of Regional Transportation Planning Agency (RTPA) representatives and Caltrans District staff, as well as representatives from other CT Headquarters' programs. This committee will continue to provide input as the tool is refined and enhanced.

A policy advisory committee (PAC) provided overall project direction and scope and included RTPA Executive Directors and Caltrans management. This group will continue to provide direction and input, as the tool, and subsequent analysis, evolves.

*ADDITIONAL INFORMATION:*

A project overview is available on the Caltrans Transportation Planning Program (TPP) website (http://www.dot.ca.gov/hq/tpp/offices/osp/ctis.htm) by selecting the heading, "State Planning." Minutes of the TAC and PAC committee meetings, which document the development of the Tool, are posted on the CTIS Web Board. The Web Board can also be accessed at the TPP website by selecting "Web Board Conferences" and logging on as a guest.

*PHASES:*

The first phase is the Investment Strategy Inventory, an integration of existing system plans in a GIS tool.  Version 1.1 of this tool is complete as of January 5, 2001

The second phase addresses the question of where we want to be.  This phase is the California Transportation Investment Directions, which will result in a long-range, future vision for investing in the State's transportation system.

The third phase addresses how we get there—the California Transportation Investment Evaluation.  This phase will utilize performance measures to evaluate investment strategies in the State's transportation system.  The second the third phases will be completed by June 30, 2001.

These efforts will culminate in the 2002 California Transportation Plan.

# California Transportation Investment System (CTIS) Tool
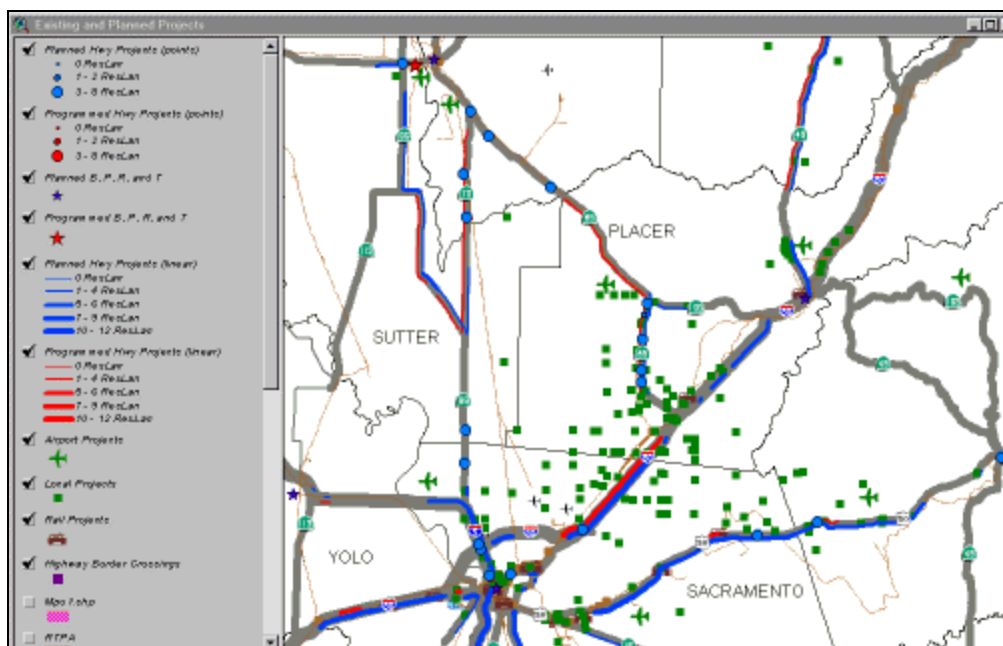
## Tool Specifics and Examples

### *Overview*

The CTIS Tool is a customized ArcView project designed to display the Planned and Programmed California Transportation Investment System (CTIS) projects. The Tool contains 10 thematic views. The CTIS program and user community developed the content and display characteristics of these views. Each view has one customized menu and 5 customized buttons (6 customized buttons in the Line Year Projects view).
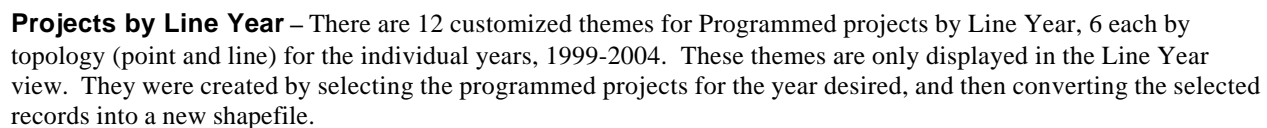
The 10 views are:
- Airport by Functional Class
- Charted Projects (by County)
- Existing and Planned Projects
- Line Year Projects
- Non-MPO Projects

- Projects by Legislative Boundaries
- Projects by Population
- Projects by Total Cost
- Projects by Urbanized areas
- Rail

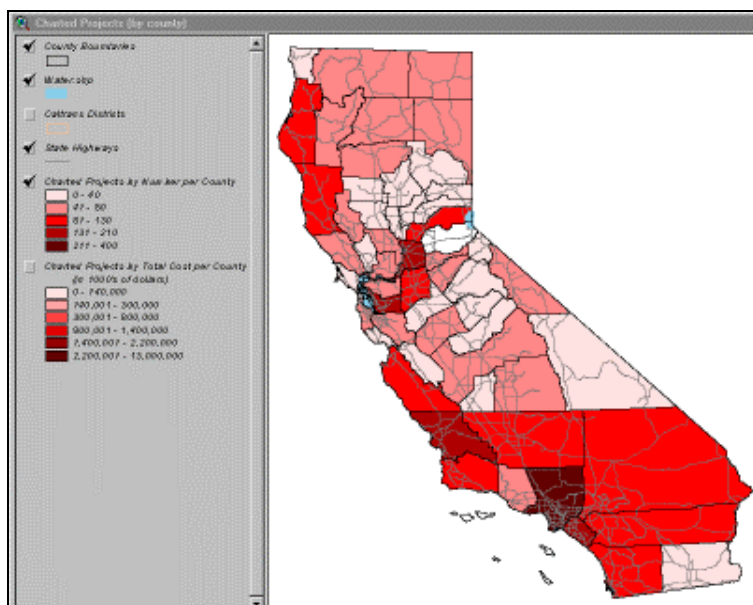### *Sample Views and Legends*
**Existing and Planned Projects**

**Projects by Line Year** – There are 12 customized themes for Programmed projects by Line Year, 6 each by topology (point and line) for the individual years, 1999-2004. These themes are only displayed in the Line Year view. They were created by selecting the programmed projects for the year desired, and then converting the selected records into a new shapefile.
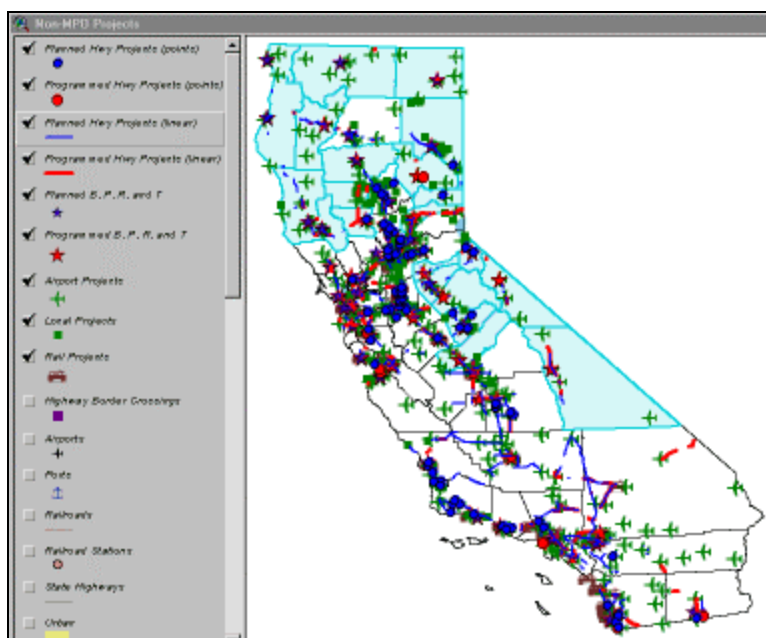


**Airport Projects**

**Charted Projects** The charted projects are not individually displayed, but are summarized by county into two customized themes: "Charted Projects by Total Number per County" and "Charted Projects by Total Cost per County." The charted table is summarized to create a "Chartedsum" file and this file is joined to the County Boundary shapefile from the GIS Spatial Data Library. The ranges were not designed with any statistical significance and can be easily modified to fit the user's needs.

The first step in modifying the range is to double-click on the theme, opening the Legend Editor. The user can then alter the ranges by clicking in the "Value" field next to the range they want to alter and changing the range values. The label is automatically updated to reflect the new range. The user can also learn more about altering the ranges in the "ArcView Help" menu.
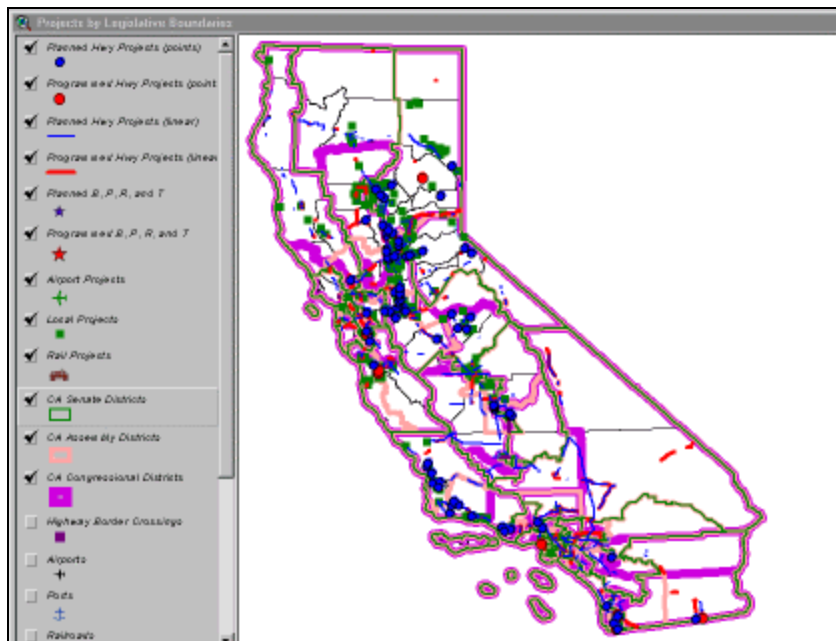


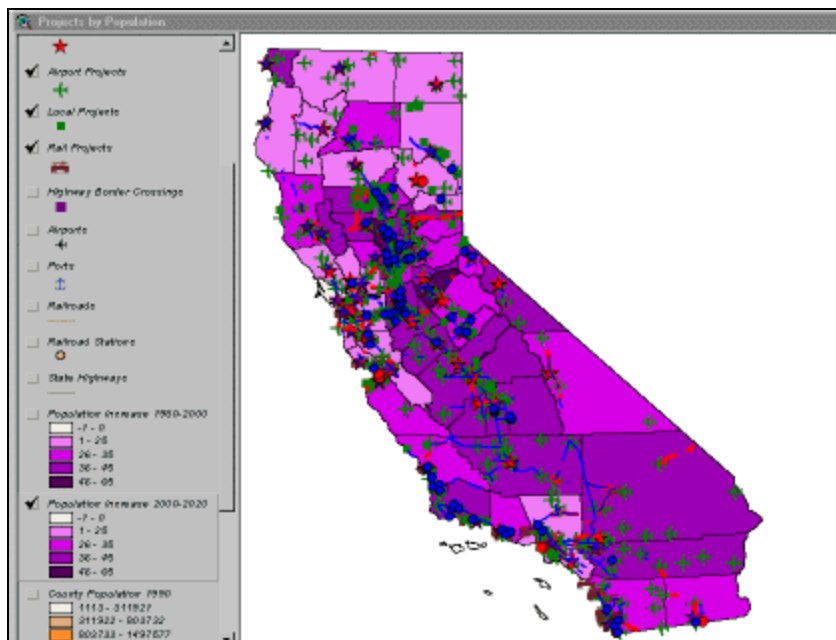**Non-MPO (Metropolitan Planning Organization)**
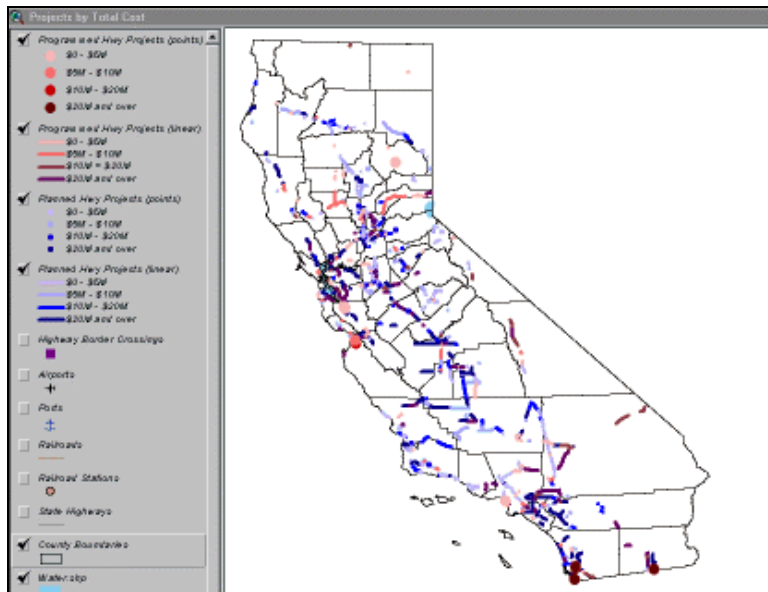
## Projects By Legislative Boundaries



## Projects By Population

The four customized themes for population in the "Projects by Population" view. These themes are "Population Increase 1980-2000," "Population Increase 2000-2020," "County Population 1990," and "County Population 1980." These themes were generated using population data provided by CTIS personnel joined to the County Boundary shapefile from the GIS Spatial Data Library. The ranges were not designed with any statistical significance and can be easily modified to fit the user's needs.
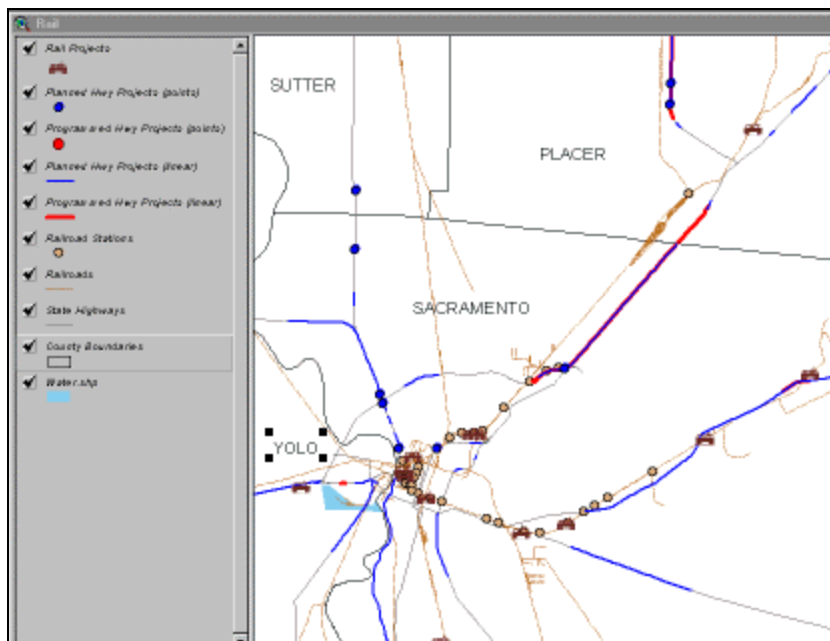
**Projects By Total Cost --** There are 4 customized themes for Highway projects in the "Projects by Total Cost" view. These themes display the total cost of individual projects in four ranges: $0 to $5 Million, $5 Million to $10 Million, $10 Million to $20 Million, and $20 Million and over. The ranges were not designed with any statistical significance and can be easily modified to fit the user's needs.



## Rail Projects
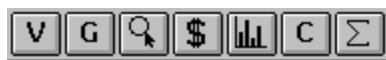
## Customized Graphical User Interface (GUI)

### Customized Menu

**ArcView GIS 3.2**

File  Edit  View  Theme  Graphics  Window  Help  (CTIS Views)

The customized "CTIS Views" menu allows the user to switch to a view by selecting the name of the view in the pull-down list rather than using the full-screen window that appears when the tool is first opened.

### Customized Buttons

The customized buttons allow the user to perform some common functions and specialized analysis of the data with the push of a single button.

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**V**  **Open View Pick List**

This button opens the full screen pick list that appears when the project is first opened. This button is visible on all views.

**G**  **Highway GAP Project Query**

This button displays highway projects that have been coded in the Purpose Code field as being a gap closure project. The themes queried are the Planned Highway Point ("Planned Hwy Projects (points)"), Planned Highway Linear ("Planned Hwy Projects (linear)"), Programmed Highway Point ("Programmed Hwy Projects (points)"), and Programmed Highway Linear ("Programmed Hwy Projects (linear)"). This button is visible on all views.

**ᰘ**  **Select Projects by Distance**

Clicking on this button opens a dialog box requesting input by the user. It will select Highway, Airport, Local and Rail projects that are a user specified distance (in miles) from Highway Border Crossings, Airports, Ports or Railroad Stations. The user can select a single or multiples of feature(s) by holding down the shift key while selecting the feature. Clicking on the OK button closes the dialog box and displays the selected projects in orange. This button is visible on all views.

**$**  **Sum Project Costs**

This button generates a box that displays the total number and total cost of projects by theme for the geography identified by the user. The sum total at the bottom is the sum of the totals reported by category. Clicking on this button opens a dialog box requesting input by the user. The available geography is Statewide, individual CALTRANS District, individual County or individual Regional Transportation Planning Agency (RTPA). The "Unit of Analysis" is Statewide, District, County or RTPA. The Area is visible only when the unit of analysis is not Statewide. The Area is a pull-down list created from the data that is populated in the database, and is relevant to the unit of analysis selected. This button is visible on all views.

**lɪl**  **Highway Project Cost Chart**

This button results in displaying a histogram of the summary project costs by Purpose Code for the user defined geography. Clicking on this button opens a dialog box requesting input by the user. The available geography is Statewide, individual CALTRANS District, individual County or individual Regional Transportation Planning Agency (RTPA). The "Unit of Analysis" is Statewide, District, County or RTPA. The Area is visible only when the

unit of analysis is not Statewide.  The Area is a pull-down list created from the data that is populated in the database, and is relevant to the unit of analysis selected. This button is visible on all views.

### Show Charted Projects Table

This button opens the "Charted Projects" table in a window that the user can use to view the individual charted projects.  The user can use the standard query, sort and promote tools in evaluating the data.  This button is visible on all views.

### Highway Project Line Year Summary

This button is only visible on the Line Year Projects view. The button generates the display of Highway project data in two histograms: total number of projects by line year and total cost of projects by line year.